

CLAIMS

What is claimed is:

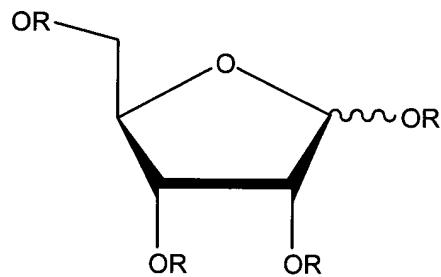
1. A method of treating acute renal failure in a subject, said method comprising the step of administering an effective amount of a composition comprising a an ester of a 2-ketoalkanoic acid or an amide of a 2-ketoalkanoic acid.
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2. The method of Claim 1 wherein the composition comprises an alkyl, aralkyl, alkoxyalkyl or carboxyalkyl ester of a 2-ketoalkanoic acid dissolved in a pharmaceutically acceptable carrier vehicle.
3. The method of Claim 2 wherein the composition comprises an enolization agent.
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4. The method of Claim 3 wherein the enolization agent is a pharmaceutically acceptable inorganic, divalent cation.
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5. The method of Claim 1 wherein the composition comprises an ethyl, propyl, butyl, carboxymethyl, acetoxymethyl, carbethoxymethyl or ethoxymethyl ester of a 2-keto-butyrate, 2-ketopentanoate, 2-keto-3-methyl-butyrate, 2-keto-4-methyl-pentanoate or 2-keto-hexanoate.
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6. The method of Claim 2 wherein the subject is being treated prophylactically for acute renal failure.
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7. The method of Claim 6 wherein the subject is at risk for developing acute renal failure.

8. The method of Claim 7 wherein the subject has at least two risk factors for developing acute renal failure.
9. The method of Claim 7 wherein the subject has at least three risk factors for developing acute renal failure.
- 5 10. The method of Claim 8 wherein the subject is undergoing contrast imaging.
11. The method of Claim 8 wherein the subject has pre-existing renal disease/dysfunction.
12. The method of Claim 8 wherein the subject is diabetic.
13. The method of Claim 8 wherein the subject is being treated with nephrotoxic drugs.
- 10 14. The method of Claim 8 wherein the subject is being treated for hypotension.
15. The method of Claim 8 wherein the subject is being treated for hemorrhagic shock, systemic inflammation or sepsis.
16. The method of Claim 8 wherein the subject is experiencing or likely to experience disruption of renal blood flow.
- 15 17. The method of Claim 16 wherein the disruption of blood flow is due to surgery.
18. The method of Claim 8 wherein the subject is experiencing liver failure or heart failure.

19. The method of Claim 1 wherein the composition comprises pyruvamide.
20. The method of Claim 2 wherein the composition comprises an ester of pyruvate.
21. A method of treating acute renal failure in a subject, said method comprising the step of administering an effective amount of a composition comprising ethyl
5 pyruvate.
22. The method of Claim 21 wherein the subject is being treated prophylactically for acute renal failure.
23. A method of prophylactically treating acute renal failure in a subject undergoing contrast imaging, said method comprising the step of administering an effective
10 amount of a composition comprising an alkyl, aralkyl, alkoxyalkyl or carboxyalkyl ester of a 2-ketoalkanoic acid dissolved in a pharmaceutically acceptable carrier vehicle.
24. A method of prophylactically treating acute renal failure in a subject undergoing contrast imaging, said method comprising the step of administering an effective
15 amount of ethyl pyruvate.
25. The method of Claim 24 wherein the ethyl pyruvate is administered in a solution comprising between 0.1 M and 0.2 M lactate.
26. The method of Claim 24 wherein the ethyl pyruvate is administered in a solution comprising between 105 mM and 110 mM NaCl and between 3.8 mM and 4.2
20 mM KCl.

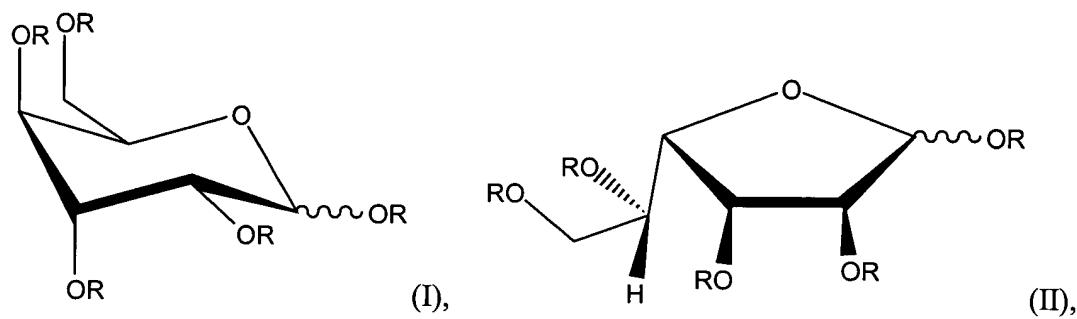
27. The method of Claim 1, wherein the subject is administered an ester of a 2-ketoalkanoic acid and wherein said ester is a glyceryl ester.

28. The method of Claim 1, wherein said the subject is administered an ester of a 2-ketoalkanoic acid and wherein said ester is a ribosyl ester represented by the following formula:



wherein each R is independently H, a 2-ketoalkanoate group or a C1-C3 acyl and at least one R is an 2-ketoalkanoate group.

29. The method of Claim 1, wherein the subject is administered an ester of a
10 2-ketoalkanoic acid and wherein said ester is a glucosyl ester described by
formulae (I) or (II):



wherein each R is independently H, a 2-ketoalkanoate group or a C1-C3 acyl and at least one R is a 2-ketoalkanoate group.

30. The method of Claim 1, wherein the subject is administered an ester of a 2-ketoalkanoic acid and wherein said ester is a dihydroxyacetone ester.